CHAPTER 6

FUTURE DIRECTIONS IN THE FORT LOUDOUN LAKE WATERSHED

6.1. BACKGROUND.

The Watershed Water Quality Management Plan serves as a comprehensive inventory of resources and stressors in the watershed, a recommendation for control measures, and a guide for planning activities in the next five-year watershed cycle and beyond. Water quality improvement will be a result of implementing both regulatory and nonregulatory programs.

In addition to the NPDES program, some state and federal regulations, such as the TMDL and ARAP programs, address point and nonpoint issues. Construction and MS4 stormwater rules (implemented under the NPDES program) are transitioning from Phase 1 to Phase 2. More information on stormwatrer rules may be found at: http://www.state.tn.us/environment/wpc/stormh2o/MS4.htm.

This Chapter addresses point and nonpoint source approaches to water quality problems in the Fort Loudoun Lake Watershed as well as specific NPDES permittee information.

6.2. COMMENTS FROM PUBLIC MEETINGS. Watershed meetings are open to the public, and most meetings were represented by citizens who live in the watershed, NPDES permitees, business people, farmers, and local river conservation interests. Locations for meetings were frequently chosen after consulting with people who live and work in the watershed. Everyone with an interest in clean water is encouraged to be a part of the public meeting process. The times and locations of watershed meetings are posted at: http://www.state.tn.us/environment/wpc/public.htm.

6.2.A. Year 1 Public Meeting. The first Fort Loudoun Lake Watershed public meeting was held April 8, 1997 in Maryville. The goals of the meeting were to 1)present, and review the objectives of, the Watershed Approach, 2)introduce local, state, and federal agency and nongovernment organization partners, 3)review water quality monitoring strategies, and 4)solicit input from the public.

Major Concerns/Comments

- The Watershed Approach affecting permits up for renewal
- Continuing development effects on the Little River
- Effects of water removal (for drinking water)
- Nonpoint source pollution

6.2.B. Year 3 Public Meeting. The second Fort Loudoun Lake Watershed public meeting was held July 27, 1999 in Townsend City Hall. The goals of the meeting were to 1)provide an overview of the watershed approach, 2)review the monitoring strategy, 3)summarize the most recent water quality assessment, 4)discuss the TMDL schedule and citizens' role in commenting on draft TMDLs, and 5)discuss BMPs and other nonpoint source tools available through the Tennessee Department of Agriculture 319 Program and NRCS conservation assistance programs.

6.2.C. Year 5 Public Meeting. The third scheduled Fort Loudoun Lake Watershed public meeting was held October 27, 2003 at Heritage High School in cooperation with the Little River Watershed Association. The meeting featured nine educational components:

- Overview of draft Watershed Water Quality Management Plan slide show
- Benthic macroinvertebrate samples and interpretation
- SmartBoard™ with interactive GIS maps
- "How We Monitor Streams" self-guided slide show
- "Why We Do Biological Sampling" self-guided slide show
- Citizen Group Displays (Little River Watershed Association, Izaak Walton League, Stock Creek Watershed, Trout Unlimited)
- University of Tennessee display
- Blount County SCD display
- Tennessee Valley Authority display

In addition, citizens had the opportunity to make formal comments on the draft Watershed Water Quality Management Plan and to rate the effectiveness of the meeting.

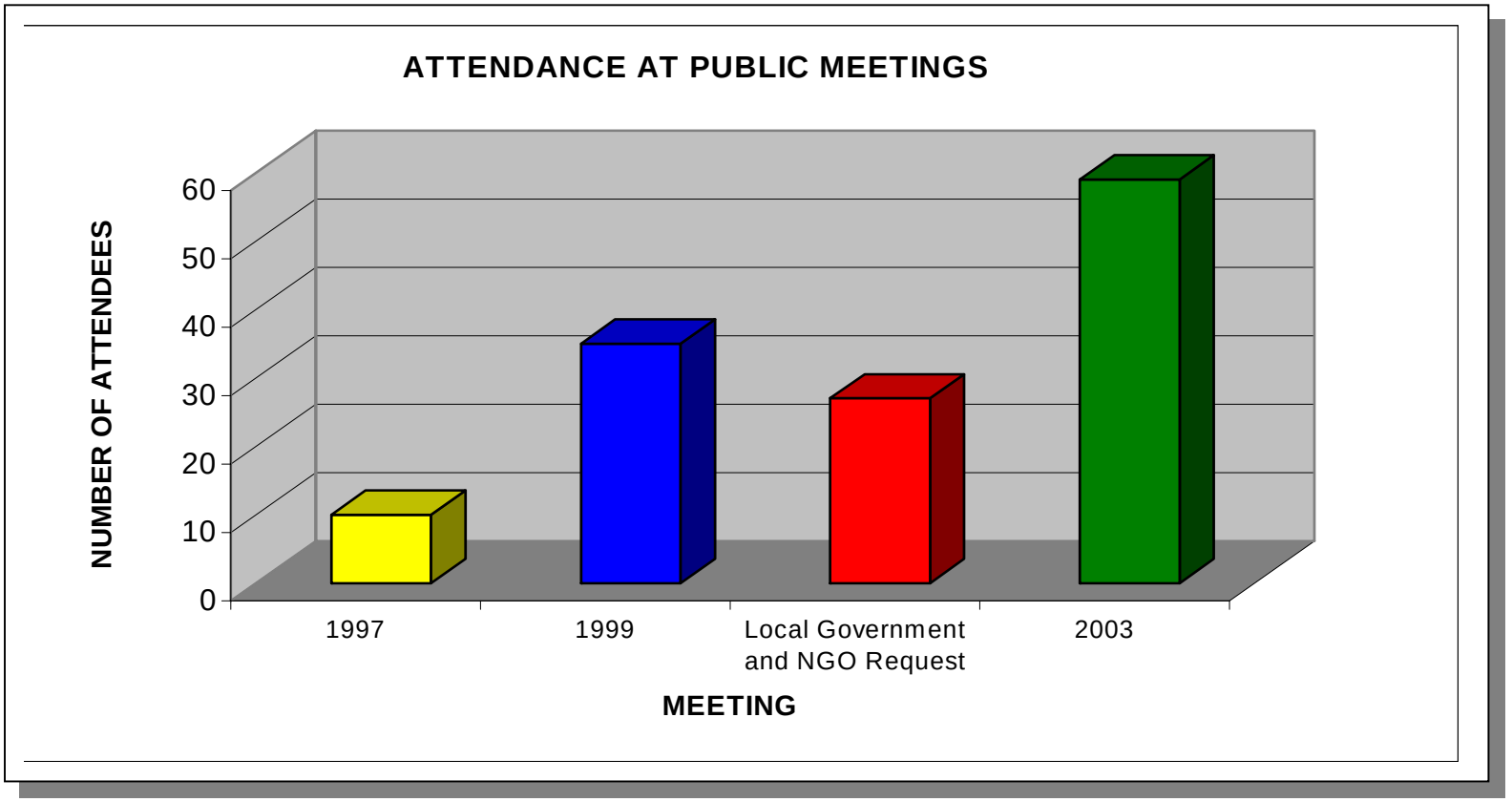

Figure 6-1. Attendance at Public Meetings in the Fort Loudoun Lake Watershed. *Attendance numbers do not include TDEC personnel. The 2003 meeting was held in cooperation with the Little River Watershed Association.*

Figure 6-2. The SmartBoard™ is an effective interactive tool to teach citizens about the power of GIS (Photo courtesy of Melissa Nance-Richwine/Little River Watershed Association).

Figure 6-3. The Stock Creek Watershed display is typical of the displays set up by local partners. *The Watershed Approach encourages and fosters local partnerships in the watershed.*

Figure 6-4. Universities, like the University of Tennessee, are important partners in the watershed approach, and use the watershed meetings to communicate their activities to the public.

6.3.A. Point Sources. Point source contributions to stream impairment are primarily addressed by NPDES and ARAP permit requirements and compliance with the terms of the permits. Notices of NPDES and ARAP draft permits available for public comment can be viewed at http://www.state.tn.us/environment/wpc/wpcppo/. Discharge monitoring data submitted by NPDES-permitted facilities may be viewed at http://www.epa.gov/enviro/html/pcs/pcs_query_java.html.

The purpose of the TMDL program is to identify remaining sources of pollution and allocate pollution control needs in places where water quality goals are still not being achieved. TMDL studies are tools that allow for a better understanding of load reductions necessary for impaired streams to return to compliance with water quality standards. More information about Tennessee's TMDL program may be found at:
http://www.state.tn.us/environment/wpc/tmdl.php

Approved TMDLs:

First, Creek, Second Creek, Third Creek, and Goose Creek TMDL. TMDL for fecal coliform in the Fort Loudoun Lake Watershed approved February 11, 2003: http://www.state.tn.us/environment/wpc/FtLoudF2.pdf

Baker Creek, Williams Creek, and Fourth Creek TMDL. TMDL for fecal coliform in the Fort Loudoun Lake Watershed approved February 13, 2003: http://www.state.tn.us/environment/wpc/FtLd2F1.pdf

TMDLs are prioritized for development based on many factors.

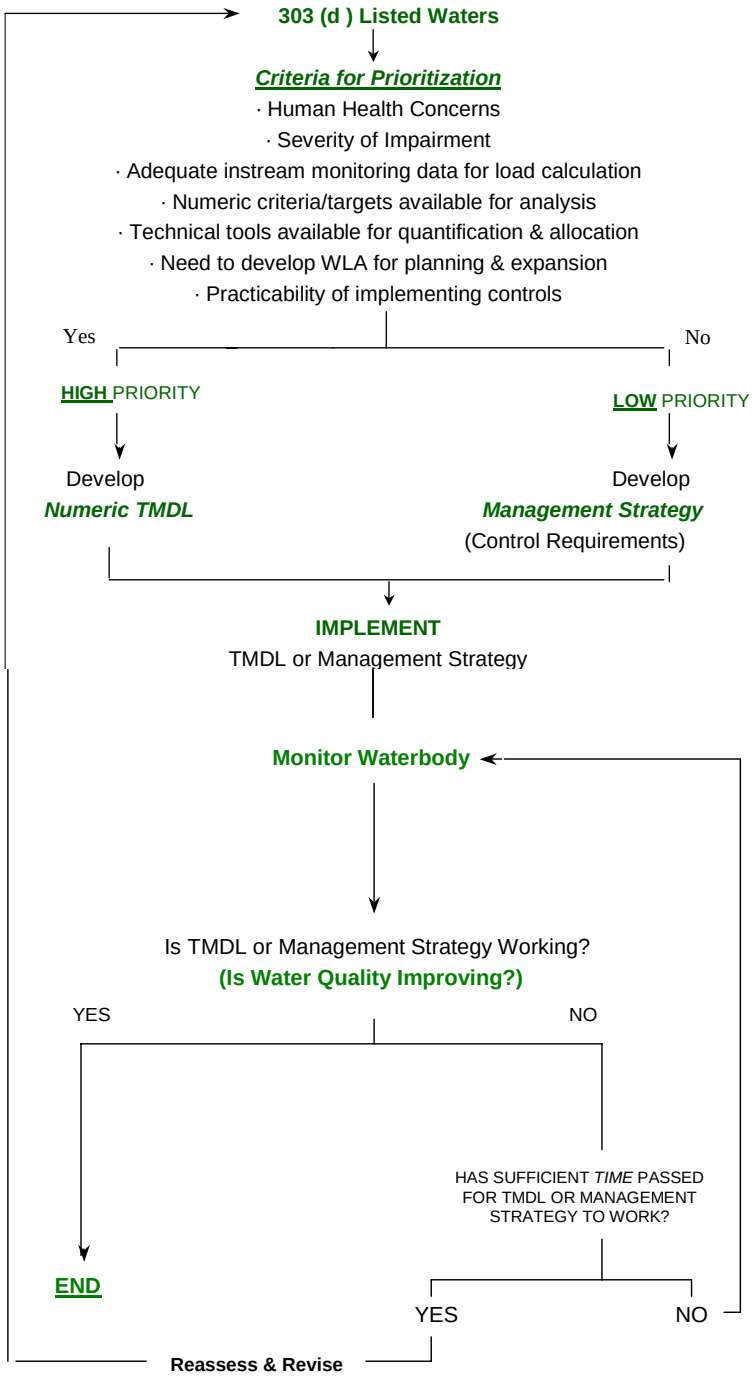

Figure 6.5. Prioritization scheme for TMDL Development.

6.3.B. Nonpoint Sources

Common nonpoint sources of pollution include urban runoff, riparian vegetation removal, and inappropriate land development, agricultural, and road construction practices. Since nonpoint pollution exists essentially everywhere rain falls and drains to a stream, existing point source regulations can have only a limited effect, so other measures are necessary.

There are several state and federal regulations that address some of the contaminants impacting waters in the Fort Loudoun Lake Watershed. Most of these are limited to only point sources: a pipe or ditch. Often, controls of point sources are not sufficient to protect waters, so other measures are necessary. Some measures include voluntary efforts by landowners and volunteer groups, while others may involve new regulations. Many agencies, including the Tennessee Department of Agriculture and NRCS, offer financial assistance to landowners for corrective actions (like Best Management Practices) that may be sufficient for recovery of impacted streams. Many nonpoint problems will require an active civic involvement at the local level geared towards establishment of improved zoning guidelines, building codes, streamside buffer zones and greenways, and general landowner education.

The following text describes certain types of impairments, causes, suggested improvement measures, and control strategies. The suggested measures and streams are only examples and efforts should not be limited to only those streams and measures mentioned.

6.3.B.i. Sedimentation.

6.3.B.i.a. From Construction Sites. Construction activities have historically been considered “nonpoint sources.” In the late 1980’s, EPA designated them as being subject to NPDES regulation if more than 5 acres are disturbed. In the spring of 2003, that threshold became 1 acre. The general permit issued for such construction sites sets out conditions for maintenance of the sites to minimize pollution from stormwater runoff, including requirements for installation and inspection of erosion controls. Also, the general permit imposes more stringent inspection and self-monitoring requirements on sites in the watershed of streams that are already impaired due to sedimentation. Examples in the Fort Loudoun Lake Watershed are Third Creek and Knox County and Russell Branch in Blount County. Regardless of the size, no construction site is allowed to cause a condition of pollution.

Construction sites within a sediment-impaired watershed may also have higher priority for inspections by WPC personnel, and are likely to have enforcement actions for failure to control erosion.

The same requirements apply to sites in the drainage of high quality waters. Little River and Double Branch in Blount County are examples of high quality streams in Fort Loudoun Lake Watershed.

6.3.B.i.b. From Channel and/or Bank Erosion. Due to the past alteration of Fourth Creek and Nails Creek, and other Fort Loudoun Lake tributaries, the channels are unstable. Several agencies are working to stabilize portions of stream banks. These include NRCS and the Tennessee Valley Authority, as well as watershed citizen groups. Other methods or controls that might be necessary to address common problems are:

Voluntary activities

- Re-establishment of bank vegetation (examples: Nails Creek).
- Establish off channel watering areas for cattle by moving watering troughs and feeders back from stream banks (examples: tributaries of Ellejoy Creek and Nails Creek).
- Limit cattle access to streams and bank vegetation (examples: Ellejoy Creek and Nails Creek).

Additional strategies

- Better community planning for the impacts of development on small streams (example: Stock Creek).
- Restrictions requiring post-construction run-off rates to be no greater than pre-construction rates in order to avoid in-channel erosion, (examples: First Creek, Third Creek, and other Knox County urban streams).
- Additional restriction to road and utilities crossings of streams.
- Restrictions on the use of off-highway vehicles on stream banks and in stream channels.

6.3.B.i.c. From Agriculture and Silviculture. Even though there is an exemption in the Water Quality Control Act which states that normal agricultural and silvicultural practices which do not result in a point source discharge do not have to obtain a permit, efforts are being made to address impacts due to these practices.

The Master Logger Program has been in place for several years to train loggers how to plan their logging activities and to install Best management Practices that lessen the impact of logging activities. Recently, laws and regulations were enacted which established the expected BMPs to be used and allows the Commissioners of the Departments of Environment and Conservation and of Agriculture to stop a logging operation that has failed to install these BMPs and so are impacting streams. Any timber harvest in the Fort Loudoun Lake Watershed are small and isolated.

Since the Dust Bowl era, the agriculture community has strived to protect the soil from wind and soil erosion. Agencies such as the Natural Resources Conservation Service (NRCS), the University of Tennessee Agricultural Extension Service, and the Tennessee Department of Agriculture have worked to identify better ways of farming, to educate the farmers, and to install the methods that address the sources of some of the impacts due to agriculture. Cost sharing is available for many of these measures. Nails Creek, for example, has already had several BMPs installed to address the sediment lost from fields in this watershed.

6.3.B.ii. Pathogen Contamination.

Possible sources of pathogens are inadequate or failing septic tank systems, overflows or breaks in public sewer collection systems, poorly disinfected discharges from sewage treatment plants, and fecal matter in streams and storm drains due to pets, livestock and wildlife. Permits issued by the Division of Water Pollution Control regulate discharges from point sources and require adequate control for these sources. Individual homes are required to have subsurface, on-site treatment (i.e., septic tank and field lines) if public sewers are not available. Septic tank and field lines are regulated by the Division of Ground Water Protection within Knoxville Environmental Assistance Center and delegated county health departments. In addition to discharges to surface waters, businesses may employ either subsurface or surface disposal of wastewater. The Division of Water Pollution Control regulates surface disposal.

Other measures that may be necessary to control pathogens are:

Voluntary activities

- Off-channel watering of livestock (example: tributaries of Ellejoy Creek).
- Limiting livestock access to streams (examples: Ellejoy Creek).
- Proper management of animal waste from feeding operations.

Enforcement strategies

- Greater enforcement of regulations governing on-site wastewater treatment.
- Timely and appropriate enforcement for non-complying sewage treatment plants, large and small, and their collection systems.
- Identification of Concentrated Animal Feeding Operations not currently permitted, and enforcement of current regulations.

Additional strategies

- Restrict development in areas where sewer is not available and treatment by subsurface disposal is not an option due to poor soils, floodplains, or high water tables.
- Develop and enforce leash laws and controls on pet fecal material (examples: First Creek and other urban streams).
- Greater efforts by sewer utilities to identify leaking lines or overflowing manholes, (example: Williams Creek).

6.3.B.iii. Excessive Nutrients and/or Dissolved Oxygen Depletion.

These two impacts are usually listed together because high nutrients often contribute to low dissolved oxygen within a stream. Since nutrients often have the same source as pathogens, the measures previously listed can also address many of these problems. Elevated nutrient loadings are also often associated with urban runoff from impervious surfaces and from fertilized lawns and croplands.

Other sources of nutrients can be addressed by:

Voluntary activities

- Educate homeowners and lawn care companies in the proper application of fertilizers.
- Encourage landowners, developers, and builders to leave stream buffer zones (examples of streams that could benefit are the Third Creek, Brown Creek, Turkey Creek, and areas along stream channels). Streamside vegetation can filter out many nutrients and other pollutants before they reach the stream. These riparian buffers are also vital along livestock pastures.
- Use grassed drainage ways that can remove fertilizer before it enters streams.
- Use native plants for landscaping since they don't require as much fertilizer and water.

Physical changes to streams can prevent them from providing enough oxygen to biodegrade the materials that are naturally present. A few additional actions can address this problem:

- Maintain shade over a stream. Cooler water can hold more oxygen and retard the growth of algae (example: Flat Fork).
- Discourage impoundments. Ponds and lakes do not aerate water. *Note: Permits may be required for any work on a stream, including impoundments.*

6.3.B.iv. Toxins and Other Materials.

Many materials enter our streams due to apathy, or lack of civility or knowledge by the public. Litter in roadside ditches, garbage bags tossed over bridge railings, paint brushes washed off over storm drains, and oil drained into ditches are all examples of pollution in streams. Some can be addressed by:

Voluntary activities

- Providing public education.
- Painting warnings on storm drains that connect to a stream (this has been done on Third Creek and other Knoxville urban streams).
- Sponsoring community clean-up days (this has already benefited First Creek, Fourth Creek, and Fort Loudoun Lake.
- Landscaping of public areas.

- Encouraging public surveillance of their streams and reporting of dumping activities to their local authorities.

Needing regulation

- Prohibition of illicit discharges to storm drains.
- Litter laws and strong enforcement at the local level.

6.3.B.v. Habitat Alteration.

The alteration of the habitat within a stream can have severe consequences. Whether it is the removal of the vegetation providing a root system network for holding soil particles together, the release of sediment, which increases the bed load and covers benthic life and fish eggs, the removal of gravel bars, "cleaning out" creeks with heavy equipment, or the impounding of the water in ponds and lakes, many alterations impair the use of the stream for designated uses. Habitat alteration also includes the draining or filling of wetlands.

Measures that can help address this problem are:

Voluntary activities

- Sponsoring litter pickup days to remove litter that might enter streams.
- Organizing stream cleanups removing trash, limbs and debris before they cause blockage.
- Avoiding use of heavy equipment to "clean out" streams.
- Planting vegetation along streams to stabilize banks and provide habitat Sequoyah Hills park along Fort Loudoun Lake has had long segments bioengineered using matting and tree plantings to revegetate).
- Encouraging developers to avoid extensive culverts in streams.

Current regulations

- Restrict modification of streams by such means as culverting, lining, or impounding.
- Require mitigation for impacts to streams and wetlands when modifications are allowed.

Additional Enforcement

- Increased enforcement may be needed when violations of current regulations occur.

6.4. PERMIT REISSUANCE PLANNING

Under the *Tennessee Water Quality Control Act*, municipal, industrial and other dischargers of wastewater must obtain a permit from the Division. Approximately 1,700 permits have been issued in Tennessee under the federally delegated National Pollutant Discharge Elimination System (NPDES). These permits establish pollution control and monitoring requirements based on protection of designated uses through implementation of water quality standards and other applicable state and federal rules.

The following three sections provide specific information on municipal, industrial, and water treatment active plant permit holders in the Fort Loudon Lake Watershed. Compliance information was obtained from EPA's Permit Compliance System (PCS). All data was queried for a five-year period between January 1, 2001 and December 31, 2006. PCS can be accessed publicly through EPA's Envirofacts website. This website provides access to several EPA databases to provide the public with information about environmental activities that may affect air, water, and land anywhere in the United States:

http://www.epa.gov/enviro/html/ef_overview.html

Stream Segment information, including designated uses and impairments, are described in detail in Chapter 3, *Water Quality Assessment of Ft. Loudon Lake*.

6.4.A. Municipal Permits

TN0026271 Friendsville Elementary School

Discharger rating: Minor
City: Friendsville
County: Blount
EFO Name: Knoxville
Issuance Date: 10/31/02
Expiration Date: 10/31/07
Receiving Stream(s): Gallagher Creek at mile 3.5
HUC-12: 060102010201
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Extended aeration

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
TSS	All Year	45	DMax Conc	mg/L	2/Month	Grab	Effluent
TSS	All Year	30	MAvg Conc	mg/L	2/Month	Grab	Effluent

Table 6-1. Permit Limits for Friendsville Elementary School.

EFO Comments:
None.

TN0028177 Ritta School Waste Water Treatment Plant

Discharger rating: Minor
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 10/30/03
Expiration Date: 10/30/08
Receiving Stream(s): Tennessee River Mile 651.5
HUC-12: 060102010202
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Extended aeration

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
TSS	All Year	45	DMax Conc	mg/L	Monthly	Grab	Effluent
TSS	All Year	30	MAvg Conc	mg/L	Monthly	Grab	Effluent

Table 6-2. Permit Limits for Ritta School Waste Water Treatment Plant.

EFO Comments:
None.

TN0022349 Great Smoky Mountains National Park - Elkmont Camp Ground

Discharger rating: Minor
City: Gatlinburg
County: Sevier
EFO Name: Knoxville
Issuance Date: 4/30/02
Expiration Date: 4/29/07
Receiving Stream(s): Little River at mile 49.6
HUC-12: 060102010101
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: WAS to aerobic dig to drybeds to hauler to compost site.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
BOD5	All Year	45	DMax Conc	mg/L	2/Month	Grab	Effluent
BOD5	All Year	30	MAvg Conc	mg/L	2/Month	Grab	Effluent
D.O.	All Year	1	DMin Conc	mg/L	Weekdays	Grab	Effluent
Fecal Coliform	All Year	1000	DMax Conc	#/100mL	2/Month	Grab	Effluent
Fecal Coliform	All Year	200	MAvg Geo Mean	#/100mL	2/Month	Grab	Effluent
Settleable Solids	All Year	1	DMax Conc	mL/L	2/Week	Grab	Effluent
TRC	All Year	2	DMax Conc	mg/L	Weekdays	Grab	Effluent
TSS	All Year	45	DMax Conc	mg/L	2/Month	Grab	Effluent
TSS	All Year	30	MAvg Conc	mg/L	2/Month	Grab	Effluent
pH	All Year	9	DMax Conc	SU	2/Week	Grab	Effluent
pH	All Year	6	DMin Conc	SU	2/Week	Grab	Effluent

Table 6-3. Permit Limits for Elkmont Camp Ground.

EFO Comments:
None

TN0022594 Tremont Institute

Discharger rating: Minor
City: Townsend
County: Sevier
EFO Name: Knoxville
Issuance Date: 8/30/02
Expiration Date: 8/29/07
Receiving Stream(s): Middle Prong Little River at mile 2.5
HUC-12: 060102010102
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: extended aeration

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
BOD5	All Year	45	DMax Conc	mg/L	Monthly	Grab	Effluent
BOD5	All Year	30	MAvg Conc	mg/L	Monthly	Grab	Effluent
D.O.	All Year	1	DMin Conc	mg/L	Weekdays	Grab	Effluent
Fecal Coliform	All Year	1000	DMax Conc	#/100mL	Monthly	Grab	Effluent
Fecal Coliform	All Year	200	MAvg Geo Mean	#/100mL	Monthly	Grab	Effluent
Settleable Solids	All Year	1	DMax Conc	mL/L	2/Week	Grab	Effluent
TRC	All Year	2	DMax Conc	mg/L	Weekdays	Grab	Effluent
TSS	All Year	45	DMax Conc	mg/L	Monthly	Grab	Effluent
TSS	All Year	30	MAvg Conc	mg/L	Monthly	Grab	Effluent
pH	All Year	9	DMax Conc	SU	2/Week	Grab	Effluent
pH	All Year	6	DMin Conc	SU	2/Week	Grab	Effluent

Table 6-4. Permit Limits for Tremont Institute.

TN0023353 First Utility District of Knox County - Turkey Creek STP

Discharger rating: Major
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 10/31/02
Expiration Date: 2/28/07
Receiving Stream(s): Ft. Loudoun Reservoir
HUC-12: 060102010207
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: WAS, belt press, land application.

Segment	TN06010201020_1000
Name	Fort Loudoun Reservoir
Size	14600
Unit	Acres
First Year on 303(d) List	1990
Designated Uses	Irrigation (Supporting), Livestock Watering and Wildlife (Supporting), Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Non-Supporting)
Causes	Polychlorinated biphenyls
Sources	Contaminated Sediments

Table 6-5. Stream Segment Information for Turkey Creek STP.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Ammonia as N (Total)	All Year		MAvg Conc	mg/L	2/Month	Composite	Effluent
BOD % removal	All Year	40	DMin % Removal	Percent	Daily	Calculated	% Removal
BOD % removal	All Year	85	MAvg % Removal	Percent	Daily	Calculated	% Removal
BOD5	All Year	45	DMax Conc	mg/L	Daily	Composite	Effluent
BOD5	All Year	30	WAvg Conc	mg/L	Daily	Composite	Effluent
BOD5	All Year	40	MAvg Conc	mg/L	Daily	Composite	Effluent
BOD5	All Year	5004	DMax Load	lb/day	Daily	Composite	Effluent
BOD5	All Year	3753	MAvg Load	lb/day	Daily	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		MAvg Load	Occurences/Month	Continuous	Visual	Wet Weather
D.O.	All Year	5	DMin Conc	mg/L	Daily	Grab	Effluent
Dissolved Solids, Total (TDS)	All Year		MAvg Conc	mg/L	2/Month	Composite	Effluent
Escherichia coli	All Year	126	MAvg Geo Mean	#/100mL	Daily	Grab	Effluent
Fecal Coliform	All Year	1000	DMax Conc	#/100mL	Daily	Grab	Effluent
Fecal Coliform	All Year	200	MAvg Geo Mean	#/100mL	Daily	Grab	Effluent
NOEL 7day Ceriodaphnia Dubia	All Year	2	DMin Conc	Percent	Quarterly	Composite	Effluent
NOEL 7day Fathead Minnows	All Year	2	DMin Conc	Percent	Quarterly	Composite	Effluent
Nitrite + Nitrate Total (as N)	All Year		MAvg Conc	mg/L	2/Month	Composite	Effluent

Table 6-6a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Nitrogen Organic Total (as N)	All Year		MAvg Conc	mg/L	2/Month	Composite	Effluent
Nitrogen Total (as N)	All Year		MAvg Conc	mg/L	2/Month	Calculated	Effluent
Overflow Use Occurences	All Year		MAvg Load	Occurences/Month	Continuous	Visual	Wet Weather
Overflow Use Occurences	All Year		MAvg Load	Occurences/Month	Continuous	Visual	Non Wet Weather
Phosphate Ortho (as PO4)	All Year		MAvg Conc	mg/L	2/Week	Composite	Effluent
Phosphorus, Total	All Year		MAvg Conc	mg/L	2/Month	Composite	Effluent
Settleable Solids	All Year	1	DMax Conc	mL/L	Daily	Composite	Effluent
TKN - Total Kjeldahl Nitrogen	All Year		MAvg Conc	mg/L	2/Month	Composite	Effluent
TOC	All Year		MAvg Conc	mg/L	2/Week	Composite	Effluent
TRC	All Year	1.7	DMax Conc	mg/L	Daily	Grab	Effluent
TSS	All Year	45	DMax Conc	mg/L	Daily	Composite	Effluent
TSS	All Year	30	WAvg Conc	mg/L	Daily	Composite	Effluent
TSS	All Year	40	MAvg Conc	mg/L	Daily	Composite	Effluent
TSS	All Year	5004	DMax Load	lb/day	Daily	Composite	Effluent
TSS	All Year	3753	MAvg Load	lb/day	Daily	Composite	Effluent
TSS % Removal	All Year	40	DMin % Removal	Percent	Daily	Calculated	% Removal
TSS % Removal	All Year	85	MAvg % Removal	Percent	Daily	Calculated	% Removal
pH	All Year	9	DMax Conc	SU	Daily	Grab	Effluent
pH	All Year	6.5	DMin Conc	SU	Daily	Grab	Effluent

Table 6-6b.

Table 6-6a-b. Permit Limits for Turkey Creek STP.

Compliance History:
The following exceedences were noted in PCS:

- 9 Settleable Solids
- 4 BOD
- 4 Suspended Solids % Removal
- 8 TSS
- 2 Dissolved Oxygen
- 3 Escherichia coli
- 5 Fecal Coliform
- 105 Overflows
- 20 Bypasses

Enforcement History:
Commissioner's Order # 02-0824
Database Notes: *STATE ORDER SUPERCEDED BY FEDERAL CONSENT ORDER SIGNED - COMPLIANCE WILL BE TRACKED BY EPA.*
Order issued for collection system overflows during '01 and '02. Requires extensive "MOMs" corrective action.
OGC received petition to intervene from city of Knoxville on 3/17/03.
Submitted documentation of funding on-going public awareness/education program. KUB funded Ijams program for $61,131 in July '03.

SSOER submitted 9/15/03. Public Information/Public Input Plan received 11/18/03.
WPC sent letter 12/10/03 withholding approval of SORP until comments on the plan have been addressed.
Summary of the elements of KUB's MOM program received 2/13/04.
Notice that CAP had been implemented on May 20, 2004.
Revised SSOER submitted 9/30/04, and approved on 10/21/04.
Received the following:
4/5/05 - Operations Record Keeping Program for Waste Water Treatment Plants,
4/5/05 - Comprehensive Performance Evaluation (CPE) Program,
4/6/05 - List of authorized sewer connections or increases in flow from existing connections that have not yet been introduced into the WCTS.
4/7/05 - Revised Sewer Overflow Response Plan (SORP),
4/14/05 - Private Lateral Legal Support Program
Documentation of payment of $150,000 to the SEP escrow account received 9/9/05.

EFO Comments:
First Utility is planning a plant expansion.

TN0023574 KUB- Fourth Creek STP

Discharger rating: Major
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 4/30/04
Expiration Date: 4/29/07
Receiving Stream(s): Tennessee River Mile 640
HUC-12: 060102010201
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Primary and WAS pumped to Kuwahee Sewage Treatment Plant

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
BOD % removal	All Year	40	DMin % Removal	Percent	Daily	Calculated	% Removal
BOD % removal	All Year	85	MAvg % Removal	Percent	Daily	Calculated	% Removal
BOD5	All Year	45	DMax Conc	mg/L	Daily	Composite	Effluent
BOD5	All Year	30	WAvg Conc	mg/L	Daily	Composite	Effluent
BOD5	All Year	40	MAvg Conc	mg/L	Daily	Composite	Effluent
BOD5	All Year	3603	DMax Load	lb/day	Daily	Composite	Effluent
BOD5	All Year	2702	MAvg Load	lb/day	Daily	Composite	Effluent
D.O.	All Year	1	DMin Conc	mg/L	Daily	Grab	Effluent
Fecal Coliform	All Year	1000	DMax Conc	#/100mL	Daily	Grab	Effluent
Fecal Coliform	All Year	200	MAvg Geo Mean	#/100mL	Daily	Grab	Effluent
IC25 7day Ceriodaphnia Dubia	All Year	1.6	DMin Conc	Percent	Quarterly	Composite	Effluent
IC25 7day Fathead Minnows	All Year	1.6	DMin Conc	Percent	Quarterly	Composite	Effluent
Settleable Solids	All Year	1	DMax Conc	mL/L	Daily	Composite	Effluent
TRC	All Year	1	DMax Conc	mg/L	Weekdays	Grab	Effluent
TSS	All Year	45	DMax Conc	mg/L	Daily	Composite	Effluent
TSS	All Year	30	WAvg Conc	mg/L	Daily	Composite	Effluent
TSS	All Year	40	MAvg Conc	mg/L	Daily	Composite	Effluent
TSS	All Year	3603	DMax Load	lb/day	Daily	Composite	Effluent
TSS	All Year	2702	MAvg Load	lb/day	Daily	Composite	Effluent
TSS % Removal	All Year	40	DMin % Removal	Percent	Daily	Calculated	% Removal
TSS % Removal	All Year	85	MAvg % Removal	Percent	Daily	Calculated	% Removal
pH	All Year	9	DMax Conc	SU	Weekdays	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Weekdays	Grab	Effluent

Table 6-7. Permit Limits for KUB- Fourth Creek STP.

Compliance History:

The following exceedences were noted in PCS:

- 4 Settleable Solids
- 8 BOD
- 4 Suspended Solids % Removal
- 11 TSS

- 1 Fecal coliform.
- 39 Overflows
- 28 Bypasses

Enforcement History:
Commissioner's Order # 02-0824
Database Notes: *STATE ORDER SUPERCEDED BY FEDERAL CONSENT ORDER SIGNED - COMPLIANCE WILL BE TRACKED BY EPA.*
Order issued for collection system overflows during '01 and '02. Requires extensive "MOMs" corrective action.
OGC received petition to intervene from city of Knoxville on 3/17/03.
Submitted documentation of funding on-going public awareness/education program. KUB funded Ijams program for $61,131 in July '03.
SSOER submitted 9/15/03. Public Information/Public Input Plan received 11/18/03.
WPC sent letter 12/10/03 withholding approval of SORP until comments on the plan have been addressed.
Summary of the elements of KUB's MOM program received 2/13/04.
Notice that CAP had been implemented on May 20, 2004.
Revised SSOER submitted 9/30/04, and approved on 10/21/04.
Received the following:
4/5/05 - Operations Record Keeping Program for Waste Water Treatment Plants,
4/5/05 - Comprehensive Performance Evaluation (CPE) Program,
4/6/05 - List of authorized sewer connections or increases in flow from existing connections that have not yet been introduced into the WCTS.
4/7/05 - Revised Sewer Overflow Response Plan (SORP),
4/14/05 - Private Lateral Legal Support Program
Documentation of payment of $150,000 to the SEP escrow account received 9/9/05.

TN0023582 KUB- Kuwahee STP

Discharger rating: Major
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 4/30/04
Expiration Date: 4/29/07
Receiving Stream(s): Tennessee River Mile 646.2
HUC-12: 060102010201
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Primary & WAS to anaerobic digesters, filter press, land application

Segment	TN06010201020_1000
Name	Fort Loudoun Reservoir
Size	14600
Unit	Acres
First Year on 303(d) List	1990
Designated Uses	Irrigation (Supporting), Livestock Watering and Wildlife (Supporting), Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Non-Supporting)
Causes	Polychlorinated biphenyls
Sources	Contaminated Sediments

Table 6-8. Stream Segment Information for KUB-Kuwahee STP.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Ammonia as N (Total)	Summer	10	DMax Conc	mg/L	Daily	Composite	Effluent
Ammonia as N (Total)	Summer	5	WAvg Conc	mg/L	Daily	Composite	Effluent
Ammonia as N (Total)	Summer	7.5	MAvg Conc	mg/L	Daily	Composite	Effluent
Ammonia as N (Total)	Summer	2502	DMax Load	lb/day	Daily	Composite	Effluent
Ammonia as N (Total)	Summer	1668	MAvg Load	lb/day	Daily	Composite	Effluent
Ammonia as N (Total)	Winter	25	DMax Conc	mg/L	Daily	Composite	Effluent
Ammonia as N (Total)	Winter	15	WAvg Conc	mg/L	Daily	Composite	Effluent
Ammonia as N (Total)	Winter	205	MAvg Conc	mg/L	Daily	Composite	Effluent
Ammonia as N (Total)	Winter	6672	DMax Load	lb/day	Daily	Composite	Effluent
Ammonia as N (Total)	Winter	5004	MAvg Load	lb/day	Daily	Composite	Effluent
CBOD % Removal	All Year	40	DMin % Removal	Percent	Daily	Calculated	% Removal
CBOD % Removal	All Year	85	MAvg % Removal	Percent	Daily	Calculated	% Removal
CBOD5	All Year	40	DMax Conc	mg/L	Daily	Composite	Effluent
CBOD5	All Year	35	MAvg Conc	mg/L	Daily	Composite	Effluent
CBOD5	All Year	25	DMin Conc	mg/L	Daily	Composite	Effluent
CBOD5	All Year	11676	DMax Load	lb/day	Daily	Composite	Effluent
CBOD5	All Year	8340	MAvg Load	lb/day	Daily	Composite	Effluent
D.O.	All Year	1	DMin Conc	mg/L	Daily	Grab	Effluent
Fecal Coliform	All Year	1000	DMax Conc	#/100mL	Daily	Grab	Effluent
Fecal Coliform	All Year	200	MAvg Geo Mean	#/100mL	Daily	Grab	Effluent

Table 6-9a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
IC25 7day Ceriodaphnia Dubia	All Year	5	DMin Conc	Percent	Quarterly	Composite	Effluent
IC25 7day Fathead Minnows	All Year	5	DMin Conc	Percent	Quarterly	Composite	Effluent
Settleable Solids	All Year	1	DMax Conc	mL/L	Daily	Composite	Effluent
TRC	All Year	0.6	DMax Conc	mg/L	Daily	Grab	Effluent
TSS	All Year	45	DMax Conc	mg/L	Daily	Composite	Effluent
TSS	All Year	40	MAvg Conc	mg/L	Daily	Composite	Effluent
TSS	All Year	30	WAvg Conc	mg/L	Daily	Composite	Effluent
TSS	All Year	13344	DMax Load	lb/day	Daily	Composite	Effluent
TSS	All Year	10008	MAvg Load	lb/day	Daily	Composite	Effluent
TSS % Removal	All Year	40	DMin % Removal	Percent	Daily	Calculated	% Removal
TSS % Removal	All Year	85	MAvg % Removal	Percent	Daily	Calculated	% Removal
pH	All Year	9	DMax Conc	SU	Daily	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Daily	Grab	Effluent

Table 6-9b.

Tables 6-9a-b. Permit Limits for KUB-Kuwahee STP.

Compliance History:
The following exceedences were noted in PCS:

- 14 Settleable Solids
- 1 Ammonia
- 2 CBOD
- 3 Suspended Solids % Removal
- 18 TSS
- 5 Fecal Coliform.
- 285 Overflows
- 68 Bypasses

Enforcement:
Commissioner's Order # 02-0824
Database Notes: *STATE ORDER SUPERCEDED BY FEDERAL CONSENT ORDER SIGNED - COMPLIANCE WILL BE TRACKED BY EPA.*
Order issued for collection system overflows during '01 and '02. Requires extensive "MOMs" corrective action.
OGC received petition to intervene from city of Knoxville on 3/17/03.
Submitted documentation of funding on-going public awareness/education program. KUB funded Ijams program for $61,131 in July '03.
SSOER submitted 9/15/03. Public Information/Public Input Plan received 11/18/03.
WPC sent letter 12/10/03 withholding approval of SORP until comments on the plan have been addressed.
Summary of the elements of KUB's MOM program received 2/13/04.
Notice that CAP had been implemented on May 20, 2004.
Revised SSOER submitted 9/30/04, and approved on 10/21/04.
Received the following:
4/5/05 - Operations Record Keeping Program for Waste Water Treatment Plants,
4/5/05 - Comprehensive Performance Evaluation (CPE) Program,

4/6/05 - List of authorized sewer connections or increases in flow from existing connections that have not yet been introduced into the WCTS.
4/7/05 - Revised Sewer Overflow Response Plan (SORP),
4/14/05 - Private Lateral Legal Support Program
Documentation of payment of $150,000 to the SEP escrow account received 9/9/05.

TN0023906 Peninsula Psychiatric Hospital

Discharger rating: Minor
City: Louisville
County: Blount
EFO Name: Knoxville
Issuance Date: 4/30/04
Expiration Date: 4/29/07
Receiving Stream(s): Tennessee River (Fort Loudon Reservoir) at mile 632.0
HUC-12: 060102010205
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Sludge to hauler to Maryville Sewage Treatment Plant

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
BOD5	All Year	45	DMax Conc	mg/L	2/Month	Grab	Effluent
BOD5	All Year	30	MAvg Conc	mg/L	2/Month	Grab	Effluent
D.O.	All Year	1	DMin Conc	mg/L	Weekdays	Grab	Effluent
Fecal Coliform	All Year	1000	DMax Conc	#/100mL	2/Month	Grab	Effluent
Fecal Coliform	All Year	200	MAvg Geo Mean	#/100mL	2/Month	Grab	Effluent
Settleable Solids	All Year	1	DMax Conc	mL/L	2/Week	Grab	Effluent
TRC	All Year	2	DMax Conc	mg/L	Weekdays	Grab	Effluent
TSS	All Year	45	DMax Conc	mg/L	2/Month	Grab	Effluent
TSS	All Year	30	MAvg Conc	mg/L	2/Month	Grab	Effluent
pH	All Year	9	DMax Conc	SU	2/Week	Grab	Effluent
pH	All Year	6	DMin Conc	SU	2/Week	Grab	Effluent

Table 6-10. Permit Limits for Peninsula Psychiatric Hospital

EFO Comments:
None.

TN0020079 Maryville Sewage Treatment Plant

Discharger rating: Major
City: Louisville
County: Blount
EFO Name: Knoxville
Issuance Date: 3/31/03
Expiration Date: 3/30/08
Receiving Stream(s): Outfall 001 to mile 637 of the Tennessee River; Outfall 002 to mile 5 of the Little River Embayment
HUC-12: 060102010201
Effluent Summary: Treated municipal wastewater from Outfalls 001 and 002
Treatment system: WAS to vacfilt to limestab to land appl

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Bypass of Treatment (occurrences)	All Year		MAvg Load	Occurences/Month	Continuous	Visual	Wet Weather
CBOD % Removal	All Year	40	DMin % Removal	Percent	3/Week	Calculated	% Removal
CBOD % Removal	All Year	85	MAvg % Removal	Percent	3/Week	Calculated	% Removal
CBOD5	All Year	40	DMax Conc	mg/L	3/Week	Composite	Effluent
CBOD5	All Year		DMax Conc	mg/L	3/Week	Composite	Influent (Raw Sewage)
CBOD5	All Year	25	DMin Conc	mg/L	3/Week	Composite	Effluent
CBOD5	All Year	35	MAvg Conc	mg/L	3/Week	Composite	Effluent
CBOD5	All Year		DMin Conc	mg/L	3/Week	Composite	Influent (Raw Sewage)
CBOD5	All Year	2919	DMax Load	lb/day	3/Week	Composite	Effluent
CBOD5	All Year	2085	MAvg Load	lb/day	3/Week	Composite	Effluent
D.O.	All Year	3	DMin Conc	mg/L	Weekdays	Grab	Effluent
Escherichia coli	All Year	126	MAvg Geo Mean	#/100mL	3/Week	Grab	Effluent
Fecal Coliform	All Year	1000	DMax Conc	#/100mL	3/Week	Grab	Effluent
Fecal Coliform	All Year	200	MAvg Geo Mean	#/100mL	3/Week	Grab	Effluent
Flow	All Year		DMax Load	MGD	Daily	Continuous	Effluent
Flow	All Year		MAvg Load	MGD	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MAvg Load	MGD	Daily	Continuous	Effluent
Flow	All Year		DMax Load	MGD	Daily	Continuous	Influent (Raw Sewage)
NOEL 7day Ceriodaphnia Dubia	All Year	1.25	DMin Conc	Percent	Quarterly	Composite	Effluent
NOEL 7day Fathead Minnows	All Year	1.25	DMin Conc	Percent	Quarterly	Composite	Effluent
Overflow Use Occurences	All Year		MAvg Load	Occurences/Month	Continuous	Visual	Wet Weather
Overflow Use Occurences	All Year		MAvg Load	Occurences/Month	Continuous	Visual	Non Wet Weather
Settleable Solids	All Year	1	DMax Conc	mL/L	3/Week	Composite	Effluent
TRC	All Year	1.5	DMax Conc	mg/L	Weekdays	Grab	Effluent

Table 6-11a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TRC	All Year	1.5	DMax Conc	mg/L	Weekdays	Grab	Effluent
TSS	All Year	45	DMax Conc	mg/L	3/Week	Composite	Effluent
TSS	All Year	30	WAvg Conc	mg/L	3/Week	Composite	Effluent
TSS	All Year		DMax Conc	mg/L	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	40	MAvg Conc	mg/L	3/Week	Composite	Effluent
TSS	All Year		MAvg Conc	mg/L	3/Week	Composite	Influent (Raw Sewage)
TSS	All Year	3336	DMax Load	lb/day	3/Week	Composite	Effluent
TSS	All Year	2502	MAvg Load	lb/day	3/Week	Composite	Effluent
TSS % Removal	All Year	40	DMin % Removal	Percent	Weekdays	Calculated	% Removal
TSS % Removal	All Year	85	MAvg % Removal	Percent	Weekdays	Calculated	% Removal
pH	All Year	9	DMax Conc	SU	Weekdays	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Weekdays	Grab	Effluent

Table 6-11b.

Tables 6-11a-b. Permit Limits for Maryville STP (Outfall 001).

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
48hr LC50: Ceriodaphnia Dubia	All Year	16	DMin Conc	Percent	Monthly	Grab	Effluent
48hr LC50: Fathead Minnows	All Year	16	DMin Conc	Percent	Monthly	Grab	Effluent
Ammonia as N (Total)	Summer	2	MAvg Conc	mg/L	1/Discharge	Composite	Effluent
Ammonia as N (Total)	Winter	5	MAvg Conc	mg/L	1/Discharge	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		MAvg Load	Occurences/Month	Continuous	Visual	Wet Weather
CBOD % Removal	All Year	40	DMin % Removal	Percent	1/Discharge	Calculated	% Removal
CBOD5	Summer	10	MAvg Conc	mg/L	1/Discharge	Composite	Effluent
CBOD5	Winter	25	MAvg Conc	mg/L	1/Discharge	Composite	Effluent
D.O.	All Year		DMax Conc	mg/L	1/Discharge	Grab	Effluent
D.O.	All Year	6	DMin Conc	mg/L	1/Discharge	Grab	Effluent
Fecal Coliform	All Year	200	DMax Conc	#/100mL	1/Discharge	Grab	Effluent
Flow	All Year		DMax Load	MGD	1/Discharge	Continuous	Effluent
Overflow Use Occurences	All Year		MAvg Load	Occurences/Month	Continuous	Visual	Wet Weather
Overflow Use Occurences	All Year		MAvg Load	Occurences/Month	Continuous	Visual	Non Wet Weather
Settleable Solids	All Year	1	DMax Conc	mL/L	1/Discharge	Composite	Effluent
TRC	All Year	0.4	DMax Conc	mg/L	1/Discharge	Grab	Effluent
TSS	All Year	30	MAvg Conc	mg/L	1/Discharge	Composite	Effluent
TSS % Removal	All Year	40	DMin % Removal	Percent	1/Discharge	Calculated	% Removal
pH	All Year	9	DMax Conc	SU	1/Discharge	Grab	Effluent
pH	All Year	6	DMin Conc	SU	1/Discharge	Grab	Effluent

Tables 6-12. Permit Limits for Maryville STP (Outfall 002).

Compliance History:
The following exceedences were noted in PCS:

- 2 Settleable Solids
- 8 Ammonia
- 5 CBOD
- 2 Suspended Solids % Removal
- 4 TSS
- 1 Fecal coliform
- 15 Escherichia coli
- 3 Chlorine
- 2 Dissolved Oxygen
- 123 Overflows
- 5 Bypasses

Enforcement:
Commissioner's Order #06-0185
Database notes: City of Maryville is a municipality in Blount County that operates a wastewater treatment plant and the associated collection system in Maryville, TN. This Order addresses several violations of the Water Quality Control Act. These violations include, but are not limited to, discharges of wastewater from Waste Water Treatment Plant in excess of NPDES permit. This Order requires the Respondent to submit for approval a CAP/ER for the Waste Water Treatment Plant, submit an SORP, implement the approved plans and make no system connections until the WPC Director allows. 09/08/06 Capacity evaluation received.
10/18/06 Received Quarterly sewer flow readings report.
11/29/06 Municipal Facilities Section sent Maryville a letter acknowledging receipt of the Waste Water Treatment Plant capacity evaluation report.

EFO Comments:
STP is at 96% capacity. A Commissioner's Order was issued addressing these issues.

TN0060780 Duncan's Landing

Discharger rating: Minor
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 2/11/04
Expiration Date: 1/31/07
Receiving Stream(s): Fort Loudoun Lake (Tennessee River) at mile 635
HUC-12: 060102010205
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Activated sludge

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
BOD5	All Year	45	DMax Conc	mg/L	2/Month	Grab	Effluent
BOD5	All Year	30	MAvg Conc	mg/L	2/Month	Grab	Effluent
D.O.	All Year	1	DMin Conc	mg/L	Weekdays	Grab	Effluent
Escherichia coli	All Year	126	MAvg Geo Mean	#/100mL	Weekly	Grab	Effluent
Fecal Coliform	All Year	1000	DMax Conc	#/100mL	2/Month	Grab	Effluent
Fecal Coliform	All Year	200	MAvg Geo Mean	#/100mL	2/Month	Grab	Effluent
Settleable Solids	All Year	1	DMax Conc	mL/L	2/Week	Grab	Effluent
TRC	All Year	2	DMax Conc	mg/L	Weekdays	Grab	Effluent
TSS	All Year	45	DMax Conc	mg/L	2/Month	Grab	Effluent
TSS	All Year	30	MAvg Conc	mg/L	2/Month	Grab	Effluent
pH	All Year	9	DMax Conc	SU	2/Week	Grab	Effluent
pH	All Year	6	DMin Conc	SU	2/Week	Grab	Effluent

Tables 6-13. Permit Limits for Duncan's Landing.

EFO Comments:
None.

6.4.B. Industrial Permits

TN0064556 USDA - Pilot Travel Centers, LLC #270

Discharger rating: Minor
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 8/31/05
Expiration Date: 6/28/07
Receiving Stream(s): Unnamed tributary to Turkey Creek at mile 4.2
HUC-12: 06010201 (Ft. Louden Lake)
Effluent Summary: Treated bay-wash wastewater from Outfall 001, storm water runoff from Outfall 002, and a UST remediation discharge (air stripping tower treating groundwater) from Outfall 01A.
Treatment system: Oil water separator for outfalls' 001 (bay-wash wastewater discharge) and 002 (stormwater discharge), air stripping tower for outfall 01A (UST remediation discharge)

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
BOD5	All Year	45	DMax Conc	mg/L	2/Month	Grab	Effluent
BOD5	All Year	30	MAvg Conc	mg/L	2/Month	Grab	Effluent
Benzene	All Year	0.1	DMax Conc	mg/L	2/Month	Grab	Effluent
Escherichia coli	All Year	126	MAvg Geo Mean	#/100mL	2/Month	Grab	Effluent
Flow	All Year		DMax Load	MGD	Weekly	Estimate	Effluent
Flow	All Year		MAvg Load	MGD	Weekly	Estimate	Effluent
Methylene Blue Active Substances (MBAS)	All Year		DMax Conc	mg/L	2/Month	Grab	Effluent
Methylene Blue Active Substances (MBAS)	All Year		MAvg Conc	mg/L	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	15	DMax Conc	mg/L	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	MAvg Conc	mg/L	2/Month	Grab	Effluent
Oil and Grease Visual	All Year		DMax Load	YES=1 NO=0	2/Week	Visual	Effluent
Pb (T)	All Year	0.03	DMax Conc	mg/L	2/Month	Grab	Effluent
Settleable Solids	All Year	0.5	DMax Conc	mL/L	2/Month	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	2/Month	Grab	Effluent
Zn (T)	All Year	0.12	DMax Conc	mg/L	2/Month	Grab	Effluent
pH	All Year	9	DMax Conc	SU	2/Month	Grab	Effluent
pH	All Year	6	DMin Conc	SU	2/Month	Grab	Effluent

Tables 6-14. Permit Limits for USDA - Pilot Travel Centers, LLC #270 (Outfall 001).

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Benzene	All Year	0.005	DMax Conc	mg/L	2/Month	Grab	Effluent
Ethylbenzene	All Year	0.01	DMax Conc	mg/L	2/Month	Grab	Effluent
Flow	All Year	0.1	DMax Conc	MGD	Weekly	Estimate	Effluent
Flow	All Year		DMax Load	MGD	Weekly	Estimate	Effluent
Toluene	All Year	0.01	DMax Conc	mg/L	2/Month	Grab	Effluent
Xylene	All Year	0.01	DMax Conc	mg/L	2/Month	Grab	Effluent
pH	All Year		DMax Conc	SU	2/Month	Grab	Effluent

Tables 6-15. Permit Limits for USDA - Pilot Travel Centers, LLC #270 (Outfall 01B).

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	50	DMax Conc	mg/L	Semi-annually	Grab	Effluent
Benzene	All Year		DMax Conc	mg/L	Semi-annually	Grab	Effluent
Escherichia coli	All Year	126	MAvg Geo Mean	#/100mL	Semi-annually	Grab	Effluent
Flow	All Year		DMax Load	MGD	Semi-annually	Estimate	Effluent
Methylene Blue Active Substances (MBAS)	All Year		DMax Conc	mg/L	Semi-annually	Grab	Effluent
Oil and Grease (Freon EM)	All Year	15	DMax Conc	mg/L	Semi-annually	Grab	Effluent
Settleable Solids	All Year		DMax Conc	mL/L	Semi-annually	Grab	Effluent
TSS	All Year	200	DMax Conc	mg/L	Semi-annually	Grab	Effluent
Zn (T)	All Year		DMax Conc	mg/L	Semi-annually	Grab	Effluent
pH	All Year		DMax Conc	SU	Semi-annually	Grab	Effluent

Tables 6-16. Permit Limits for USDA - Pilot Travel Centers, LLC #270 (Outfall SW1).

Compliance History:
The following exceedences were noted in PCS:

- 20 Settleable Solids
- 4 TSS
- 15 BOD
- 9 Oil and Grease
- 5 Escherichia coli
- 21 Fecal coliform
- 5 Toulene
- 35 Zinc
- 15 Benzene
- 3 Ethylbenzene.

Enforcement:
Commissioner's Order #05-0188
Database Notes: Pilot Travel Centers, LLC operates 3 NPDES permitted facilities. 2 in Knox Co., and 1 in Davidson Co. Multiple NPDES violations-mostly TSS, Fecal, and Zinc. Few Benzene and BOD5. Order addresses all 3 facilities.

TN0065081 Alcoa, Inc. - South Plant

Discharger rating: Major
City: Alcoa
County: Blount
EFO Name: Knoxville
Issuance Date: 3/31/04
Expiration Date: 5/29/08
Receiving Stream(s): Wet weather conveyance to Pistol Creek at mile 7.5 (005 and SW5), Pistol Creek at mile 4.7 (006 and SW6), Pistol Creek at mile 7.0 (SW4), and unnamed tributary to Springfield Branch (S01), a sink hole to Pistol Creek (S02), an unnamed pond on ALCOA property (S03) and an unnamed tribuatry to Pistol Creek (S04)
HUC-12: 060102010107
Effluent Summary: Industrial wastewater from Outfalls 005 and 006 and industrial storm water runoff from Outfalls SW4-SW6 and S01-S04
Treatment system: Settling, sand filtration, and dechlorination

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Al (T)	All Year	28.3	DMax Load	lb/day	2/Month	Grab	Effluent
Al (T)	All Year	12.5	MAvg Load	lb/day	2/Month	Grab	Effluent
F (T)	All Year	275	DMax Load	lb/day	Bi-monthly	Grab	Effluent
F (T)	All Year	261	DMax Load	lb/day	Bi-monthly	Grab	Effluent
F (T)	All Year	340	DMax Load	lb/day	Bi-monthly	Grab	Effluent
F (T)	All Year	122	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
F (T)	All Year	151	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
F (T)	All Year	116	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Flow	All Year		DMax Load	MGD	Weekly	Instantaneous	Effluent
Flow	All Year		DMax Load	MGD	Continuous	Totalizer	Instream Monitoring
Flow	All Year		MAvg Load	MGD	Weekly	Instantaneous	Effluent
Flow	All Year		MAvg Load	MGD	Continuous	Totalizer	Instream Monitoring
Ni (T)	All Year	2.5	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Ni (T)	All Year	3.14	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Ni (T)	All Year	1.7	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Ni (T)	All Year	2.13	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Ni (T)	All Year	1.63	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Ni (T)	All Year	2.41	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Sb (T)	All Year	8.9	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Sb (T)	All Year	4.91	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Sb (T)	All Year	3.77	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Sb (T)	All Year	8.46	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Sb (T)	All Year	4	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Sb (T)	All Year	11.03	DMax Load	lb/day	Bi-monthly	Grab	Effluent
TSS	All Year	10080	DMax Load	lb/day	Bi-monthly	Grab	Effluent
TSS	All Year	9900	DMax Load	lb/day	Bi-monthly	Grab	Effluent

Table 6-17a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year	12900	DMax Load	lb/day	Bi-monthly	Grab	Effluent
TSS	All Year	5220	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
TSS	All Year	6450	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
TSS	All Year	4950	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
pH	All Year	9	DMax Conc	SU	Weekly	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Weekly	Grab	Effluent

Table 6-17b.

Table 6-17a-b. Permit Limits for Alcoa, Inc. - South Plant (Outfall 06a)

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Al (T)	All Year	80	DMax Conc	mg/L	Bi-monthly	Composite	Effluent
Ammonia as N (Total)	Summer	1.8	DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Ammonia as N (Total)	Summer	0.9	MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
Ammonia as N (Total)	Winter	2.6	DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Ammonia as N (Total)	Winter	1.3	MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
Flow	All Year		DMax Load	MGD	Continuous	Recorder	Effluent
Flow	All Year		MAvg Load	MGD	Continuous	Recorder	Effluent
Fluoride Dissolved (as F)	All Year	20	DMax Conc	mg/L	Bi-monthly	Composite	Effluent
IC25 7day Ceriodaphnia Dubia	All Year	3.3	DMin Conc	Percent	Monthly	Composite	Effluent
IC25 7day Fathead Minnows	All Year	3.3	DMin Conc	Percent	Monthly	Composite	Effluent
Oil and Grease (Freon EM)	All Year	15	DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
TRC	All Year	0.58	DMax Conc	mg/L	Weekly	Grab	Effluent
TRC	All Year	0.33	MAvg Conc	mg/L	Weekly	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	Bi-monthly	Composite	Effluent
pH	All Year	9	DMax Conc	SU	Weekly	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Weekly	Grab	Effluent

Table 6-18. Permit Limits for Alcoa, Inc. - South Plant (Outfall 005)

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Al (T)	All Year	35.9	DMax Conc	mg/L	Bi-monthly	Composite	Effluent
Benzo(A)Pyrene	All Year	0.01	DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Benzo(A)Pyrene	All Year	0.005	MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
Flow	All Year		DMax Load	MGD	Continuous	Recorder	Effluent
Flow	All Year		MAvg Load	MGD	Continuous	Recorder	Effluent
Fluoride Dissolved (as F)	All Year	20	DMax Conc	mg/L	Bi-monthly	Composite	Effluent
IC25 7day Ceriodaphnia Dubia	All Year	32.3	DMin Conc	Percent	Monthly	Composite	Effluent
IC25 7day Fathead Minnows	All Year	32.3	DMin Conc	Percent	Monthly	Composite	Effluent
Oil and Grease (Freon EM)	All Year	15	DMax Conc	mg/L	Bi-monthly	Grab	Effluent

Table 6-19a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Oil and Grease (Freon EM)	All Year	10	MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
TRC	All Year	0.06	DMax Conc	mg/L	Weekly	Grab	Effluent
TRC	All Year	0.03	MAvg Conc	mg/L	Weekly	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	Bi-monthly	Composite	Effluent
pH	All Year	9	DMax Conc	SU	Weekly	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Weekly	Grab	Effluent

Table 6-19b.

Tables 6-19a-b. Permit Limits for Alcoa, Inc. - South Plant (Outfall 006)

EFO Comments:

The South Plant is an aluminum primary smelting and reclamation facility with related support facilities.

TN0067199 Alcoa, Inc. - North Plant

Discharger rating: Major
City: Alcoa
County: Blount
EFO Name: Knoxville
Issuance Date: 3/31/04
Expiration Date: 5/29/08
Receiving Stream(s): Duncan Creek at mile 0.6 (001 and SW1), an unnamed tributary to Russell Branch at mile 2.2 (007), and various wet weather discharge points along Duncan Creek and Russell Branch (01N, 01S, 01E, N01-N06, N08-N12)
HUC-12: 060102010107
Effluent Summary: Industrial wastewater from Outfall 001, industrial wastewater, landfill leachate and storm water runoff from Outfall 007, and industrial wastewater and storm water runoff from SW1, and storm water runoff from 01N, 01S, 01E, N01-N06 and N08-N12
Treatment system: Settling, sand filtration, and dechlorination

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Al (T)	All Year	3.69	DMax Conc	mg/L	Bi-monthly	Composite	Effluent
Ammonia as N (Total)	Summer	1.8	DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Ammonia as N (Total)	Summer	0.9	MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
Ammonia as N (Total)	Winter	2.6	DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Ammonia as N (Total)	Winter	1.3	MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
CBOD5	Summer	20	DMax Conc	mg/L	2/Month	Composite	Effluent
CBOD5	Summer	10	MAvg Conc	mg/L	2/Month	Composite	Effluent
CBOD5	Winter	30	DMax Conc	mg/L	2/Month	Composite	Effluent
CBOD5	Winter	20	MAvg Conc	mg/L	2/Month	Composite	Effluent
Cr (T)	All Year	0.1	MAvg Conc	mg/L	Bi-monthly	Composite	Effluent
Cyanide Free (Amen. To Chlorination)	All Year	0.022	DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Cyanide Free (Amen. To Chlorination)	All Year	0.005	MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
Cyanide, Total (CN-)	All Year		DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Cyanide, Total (CN-)	All Year		MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
D.O.	All Year	5	DMin Conc	mg/L	Weekly	Grab	Effluent
Flow	All Year		DMax Load	MGD	Continuous	Recorder	Effluent
Flow	All Year		MAvg Load	MGD	Continuous	Recorder	Effluent
IC25 7day Ceriodaphnia Dubia	All Year	100	DMin Conc	Percent	Monthly	Composite	Effluent
IC25 7day Fathead Minnows	All Year	100	DMin Conc	Percent	Monthly	Composite	Effluent
Oil and Grease (Freon EM)	All Year	15	DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
Polychlorinated Biphenyls (PCBs)	All Year	0.000002	DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Polychlorinated Biphenyls (PCBs)	All Year	0.000001	MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
TRC	All Year	0.019	DMax Conc	mg/L	Weekly	Grab	Effluent
TRC	All Year	0.011	MAvg Conc	mg/L	Weekly	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	Bi-monthly	Composite	Effluent
Zn (T)	All Year	0.36	DMax Conc	mg/L	Bi-monthly	Composite	Effluent

Table 6-20a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Zn (T)	All Year	0.33	MAvg Conc	mg/L	Bi-monthly	Composite	Effluent
pH	All Year	9	DMax Conc	SU	Weekly	Grab	Effluent
pH	All Year	6.5	DMin Conc	SU	Weekly	Grab	Effluent

Table 6-20b.

Tables 6-20a-b. Permit Limits for Outfall 001 at Alcoa, Inc. - North Plant.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	Summer	1.8	DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Ammonia as N (Total)	Summer	0.9	MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
Ammonia as N (Total)	Winter	2.6	DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Ammonia as N (Total)	Winter	1.3	MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
Cyanide Free (Amen. To Chlorination)	All Year	0.022	DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Cyanide Free (Amen. To Chlorination)	All Year	0.005	MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
Cyanide, Total (CN-)	All Year		DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Cyanide, Total (CN-)	All Year		MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
Flow	All Year		DMax Load	MGD	Continuous	Recorder	Effluent
Flow	All Year		MAvg Load	MGD	Continuous	Recorder	Effluent
IC25 7day Ceriodaphnia Dubia	All Year	100	DMin Conc	Percent	Monthly	Composite	Effluent
IC25 7day Fathead Minnows	All Year	100	DMin Conc	Percent	Monthly	Composite	Effluent
Oil and Grease (Freon EM)	All Year	15	DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
Phenols	All Year	1	DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Polychlorinated Biphenyls (PCBs)	All Year	2E-06	DMax Conc	mg/L	Bi-monthly	Grab	Effluent
Polychlorinated Biphenyls (PCBs)	All Year	1E-06	MAvg Conc	mg/L	Bi-monthly	Grab	Effluent
pH	All Year	8	DMax Conc	SU	Continuous	Recorder	Effluent
pH	All Year	6.5	DMin Conc	SU	Continuous	Recorder	Effluent

Tables 6-21. Permit Limits for Outfall 007 at Alcoa, Inc. - North Plant.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Al (T)	All Year	3.93	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Al (T)	All Year	5.64	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Al (T)	All Year	7.35	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Al (T)	All Year	9.06	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Al (T)	All Year	2.81	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Al (T)	All Year	4.52	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Al (T)	All Year	6.22	MAvg Load	lb/day	Bi-monthly	Grab	Wet Weather
Al (T)	All Year	5.37	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Al (T)	All Year	3.66	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Al (T)	All Year	1.96	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Al (T)	All Year	12.48	DMax Load	lb/day	Bi-monthly	Grab	Wet Weather
Al (T)	All Year	10.77	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Cr (T)	All Year	0.27	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Cr (T)	All Year	0.39	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Cr (T)	All Year	0.63	DMax Load	lb/day	Bi-monthly	Grab	Effluent

Table 6-22a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Cr (T)	All Year	0.74	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Cr (T)	All Year	0.51	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Cr (T)	All Year	0.86	DMax Load	lb/day	Bi-monthly	Grab	Wet Weather
Cr (T)	All Year	0.16	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Cr (T)	All Year	0.25	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Cr (T)	All Year	0.35	MAvg Load	lb/day	Bi-monthly	Grab	Wet Weather
Cr (T)	All Year	0.3	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Cr (T)	All Year	0.21	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Cr (T)	All Year	0.11	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Cyanide, Total (CN-)	All Year	0.18	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Cyanide, Total (CN-)	All Year	0.26	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Cyanide, Total (CN-)	All Year	0.34	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Cyanide, Total (CN-)	All Year	0.41	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Cyanide, Total (CN-)	All Year	0.11	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Cyanide, Total (CN-)	All Year	0.17	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Cyanide, Total (CN-)	All Year	0.23	MAvg Load	lb/day	Bi-monthly	Grab	Wet Weather
Cyanide, Total (CN-)	All Year	0.2	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Cyanide, Total (CN-)	All Year	0.14	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Cyanide, Total (CN-)	All Year	0.07	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Cyanide, Total (CN-)	All Year	0.57	DMax Load	lb/day	Bi-monthly	Grab	Wet Weather
Cyanide, Total (CN-)	All Year	0.49	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Flow	All Year		DMax Load	MGD	Bi-weekly	Instantaneous	Effluent
Flow	All Year		MAvg Load	MGD	Bi-weekly	Instantaneous	Effluent
Flow, General Measurement, Not For Outfalls	All Year		DMax Load	MGD	Continuous	Totalizer	Effluent
Flow, General Measurement, Not For Outfalls	All Year		MAvg Load	MGD	Continuous	Totalizer	Effluent
Oil and Grease (Freon EM)	All Year	12.2	DMax Load	lb/day	Bi-weekly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	17.5	DMax Load	lb/day	Bi-weekly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	22.9	DMax Load	lb/day	Bi-weekly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	38.8	DMax Load	lb/day	Bi-weekly	Grab	Wet Weather
Oil and Grease (Freon EM)	All Year	7.3	MAvg Load	lb/day	Bi-weekly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	33.5	DMax Load	lb/day	Bi-weekly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	28.2	DMax Load	lb/day	Bi-weekly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10.5	MAvg Load	lb/day	Bi-weekly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	16.9	MAvg Load	lb/day	Bi-weekly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	23.3	MAvg Load	lb/day	Bi-weekly	Grab	Wet Weather
Oil and Grease (Freon EM)	All Year	20.1	MAvg Load	lb/day	Bi-weekly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	13.7	MAvg Load	lb/day	Bi-weekly	Grab	Effluent
TSS	All Year	25.1	DMax Load	lb/day	Bi-weekly	Grab	Effluent
TSS	All Year	36	DMax Load	lb/day	Bi-weekly	Grab	Effluent
TSS	All Year	46.9	DMax Load	lb/day	Bi-weekly	Grab	Effluent
TSS	All Year	57.8	DMax Load	lb/day	Bi-weekly	Grab	Effluent
TSS	All Year	79.6	DMax Load	lb/day	Bi-weekly	Grab	Wet Weather
TSS	All Year	17.1	MAvg Load	lb/day	Bi-weekly	Grab	Effluent
TSS	All Year	27.5	MAvg Load	lb/day	Bi-weekly	Grab	Effluent
TSS	All Year	37.8	MAvg Load	lb/day	Bi-weekly	Grab	Wet Weather
TSS	All Year	32.7	MAvg Load	lb/day	Bi-weekly	Grab	Effluent
TSS	All Year	22.3	MAvg Load	lb/day	Bi-weekly	Grab	Effluent
TSS	All Year	11.9	MAvg Load	lb/day	Bi-weekly	Grab	Effluent

Table 6-22b.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year	68.7	DMax Load	lb/day	Bi-weekly	Grab	Effluent
Zn (T)	All Year	0.89	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Zn (T)	All Year	2.83	DMax Load	lb/day	Bi-monthly	Grab	Wet Weather
Zn (T)	All Year	0.53	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Zn (T)	All Year	1.18	MAvg Load	lb/day	Bi-monthly	Grab	Wet Weather
Zn (T)	All Year	1.02	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Zn (T)	All Year	0.86	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Zn (T)	All Year	0.7	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Zn (T)	All Year	0.37	MAvg Load	lb/day	Bi-monthly	Grab	Effluent
Zn (T)	All Year	2.44	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Zn (T)	All Year	1.28	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Zn (T)	All Year	1.67	DMax Load	lb/day	Bi-monthly	Grab	Effluent
Zn (T)	All Year	2.06	DMax Load	lb/day	Bi-monthly	Grab	Effluent
pH	All Year	10	DMax Conc	SU	Bi-weekly	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Bi-weekly	Grab	Effluent

Table 6-22c.

Table 6-22a-c. Permit Limits for Outfall 01A at Alcoa, Inc. - North Plant.

EFO Comments:

The North Plant is an aluminum forming and fabrication operation with hot and cold rolling capabilities. This plant also has the capacity to remelt aluminum scrap and cast ingots.

TN0027804 Gerdau AmeriSteel US Inc.

Discharger rating: Minor
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 3/31/03
Expiration Date: 3/30/08
Receiving Stream(s): East Fork Third Creek at mile 2.3
HUC-12: 06010201 (Ft. Louden Lake)
Effluent Summary: Storm water runoff associated with industrial activities through Outfall 001
Treatment system: Retention pond, sedimentation, neutralization (CO2), solid disposal to landfill

Segment	TN06010201067_1000
Name	Third Creek
Size	20.7
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Domestic Water Supply (Non-Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Escherichia coli, Nitrates, Other anthropogenic substrate alterations, Sedimentation/Siltation
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Municipal (Urbanized High Density Area), Site Clearance (Land Development or Redevelopment), Sanitary Sewer Overflows (Collection System Failures)

Table 6-23. Stream Segment Information for Gerdau AmeriSteel US Inc.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Ag (T)	All Year	0.025	DMax Conc	mg/L	Quarterly	Composite	Effluent
Al (T)	All Year	18.7	DMax Conc	mg/L	Quarterly	Composite	Effluent
B (T)	All Year	18.7	DMax Conc	mg/L	Quarterly	Composite	Effluent
Cd (T)	All Year	0.05	DMax Conc	mg/L	Quarterly	Composite	Effluent
Cu (T)	All Year	0.22	DMax Conc	mg/L	Quarterly	Composite	Effluent
Mn (T)	All Year	5	DMax Conc	mg/L	Quarterly	Composite	Effluent
NOEL 7day Ceriodaphnia Dubia	All Year	2.64	DMin Conc	Percent	Quarterly	Grab	Effluent
NOEL 7day Fathead Minnows	All Year	2.64	DMin Conc	Percent	Quarterly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	15	DMax Conc	mg/L	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	MAvg Conc	mg/L	2/Month	Grab	Effluent
Pb (T)	All Year	0.85	DMax Conc	mg/L	Quarterly	Composite	Effluent
TSS	All Year	40	DMax Conc	mg/L	2/Month	Composite	Effluent
Zinc Dissolved (as Zn)	All Year	1.62	DMax Conc	mg/L	Quarterly	Composite	Effluent
pH	All Year	9	DMax Conc	SU	2/Month	Grab	Effluent
pH	All Year	6	DMin Conc	SU	2/Month	Grab	Effluent

Table 6-24. Permit Limits for Gerdau AmeriSteel US Inc.

EFO Comments:
Steel works, blast furnaces, and rolling mills.

TN0029769 BP Products North America - Knoxville Terminal

Discharger rating: Minor
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 11/27/02
Expiration Date: 11/26/07
Receiving Stream(s): Third Creek at mile 5.0 via wet weather conveyance
HUC-12: 060102010204
Effluent Summary: Treated process wastewater and storm water runoff from Outfall 001
Treatment system: Extended aeration

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Benzene	All Year	0.5	DMax Conc	mg/L	2/Month	Grab	Effluent
Ethylbenzene	All Year	0.2	DMax Conc	mg/L	2/Month	Grab	Effluent
Flow	All Year		DMax Load	MGD	2/Month	Estimate	Effluent
Flow	All Year		MAvg Load	MGD	2/Month	Estimate	Effluent
Oil and Grease (Freon EM)	All Year	15	DMax Conc	mg/L	2/Month	Grab	Effluent
Settleable Solids	All Year	0.5	DMax Conc	mL/L	2/Month	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	2/Month	Composite	Effluent
Toluene	All Year	1	DMax Conc	mg/L	2/Month	Grab	Effluent
Xylene	All Year	0.5	DMax Conc	mg/L	2/Month	Grab	Effluent
pH	All Year	9	DMax Conc	SU	2/Month	Grab	Effluent
pH	All Year	6	DMin Conc	SU	2/Month	Grab	Effluent

Table 6-25. Permit Limits for BP Products North America - Knoxville Terminal.

EFO Comments:
Petroleum Bulk Stations and Terminals

TN0055433 Volunteer Asphalt Company

Discharger rating: Minor
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 11/27/02
Expiration Date: 11/26/07
Receiving Stream(s): Third Creek at mile 5.0 via wet weather conveyance
HUC-12: 060102010201
Effluent Summary: Industrial storm water runoff from Outfall 001
Treatment system: Oil/Water separator, equalization basin

Segment	TN06010201020_1000
Name	Fort Loudoun Reservoir
Size	14600
Unit	Acres
First Year on 303(d) List	1990
Designated Uses	Irrigation (Supporting), Livestock Watering and Wildlife (Supporting), Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Non-Supporting)
Causes	Polychlorinated biphenyls
Sources	Contaminated Sediments

Table 6-26. Stream Segment Information for Volunteer Asphalt Company.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Flow	All Year		DMax Load	MGD	Quarterly	Instantaneous	Effluent
Flow	All Year		MAvg Load	MGD	Quarterly	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	15	DMax Conc	mg/L	Quarterly	Grab	Effluent
TSS	All Year		DMax Conc	mg/L	Quarterly	Grab	Effluent
pH	All Year		DMax Conc	SU	Quarterly	Grab	Effluent
pH	All Year		DMin Conc	SU	Quarterly	Grab	Effluent

Table 6-27. Permit Limits for Volunteer Asphalt Company.

EFO Comments:
Petroleum Bulk Stations and Terminals

TN0022411 CITGO Petroleum Corporation

Discharger rating: Minor
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 5/31/02
Expiration Date: 4/30/07
Receiving Stream(s): Unnamed tributary at mile 0.5 to Third Creek at mile 5.3 which routes to Fort Loudon reservoir at Tennessee River mile 645.9
HUC-12: 060102010204
Effluent Summary: Treated and untreated storm water runoff and treated rack wash water through Outfall 001 and hydrostatic test water through Outfall 01A
Treatment system: Oil/water separator and a 20,000 gallon holding tank

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Benzene	All Year	0.5	DMax Conc	mg/L	Quarterly	Grab	Effluent
Ethylbenzene	All Year	0.2	DMax Conc	mg/L	Quarterly	Grab	Effluent
Flow	All Year		DMax Load	MGD	Quarterly	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	15	DMax Conc	mg/L	Quarterly	Grab	Effluent
Settleable Solids	All Year	0.5	DMax Conc	mL/L	Quarterly	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	Quarterly	Composite	Effluent
Toluene	All Year	1	DMax Conc	mg/L	Quarterly	Grab	Effluent
Xylene	All Year	0.5	DMax Conc	mg/L	Quarterly	Grab	Effluent
pH	All Year	9	DMax Conc	SU	Quarterly	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Quarterly	Grab	Effluent

Table 6-28. Permit Limits for CITGO Petroleum Corporation.

EFO Comments:
Petroleum Bulk Stations and Terminals

TN0002216 Kinder Morgan Southeast Terminals LLC

Discharger rating: Minor
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 3/30/02
Expiration Date: 2/28/07
Receiving Stream(s): Mile 0.6 of an unnamed tributary to Third Creek at mile 5.3
HUC-12: 060102010204
Effluent Summary: Non-process wastewater and storm water runoff - rack/pump/pad and equipment washdown, monitoring well purge, tank/piping hydrostatic testing water, stormwater runoff from racks, paved areas, and tank farms from Outfall 001
Treatment system: -

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Benzene	All Year	0.5	DMax Conc	mg/L	Monthly	Grab	Effluent
Ethylbenzene	All Year	0.2	DMax Conc	mg/L	Monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	15	DMax Conc	mg/L	Monthly	Grab	Effluent
Settleable Solids	All Year	0.5	DMax Conc	mL/L	Monthly	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	Monthly	Composite	Effluent
Toluene	All Year	1	DMax Conc	mg/L	Monthly	Grab	Effluent
Xylene	All Year	0.5	DMax Conc	mg/L	Monthly	Grab	Effluent
pH	All Year	9	DMax Conc	SU	Monthly	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Monthly	Grab	Effluent

Table 6-29. Permit Limits for Kinder Morgan Southeast Terminals LLC.

EFO Comments:
Pipeline terminal that stores and distributes refined petroleum products

TN0002682 Rohm and Haas Chemicals, LLC

Discharger rating: Minor
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 6/30/02
Expiration Date: 6/29/07
Receiving Stream(s): East Fork Third Creek at mile 0.1
HUC-12: 060102010204
Effluent Summary: Industrial storm water runoff from Outfalls SW1, SW2 and SW3
Treatment system: -

Segment	TN06010201067_1000
Name	Third Creek
Size	20.7
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Domestic Water Supply (Non-Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Escherichia coli, Nitrates, Other anthropogenic substrate alterations, Sedimentation/Siltation
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Municipal (Urbanized High Density Area), Site Clearance (Land Development or Redevelopment), Sanitary Sewer Overflows (Collection System Failures)

Table 6-30. Stream Segment Information for Rohm and Haas Chemicals, LLC.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
BOD5	All Year		DMax Conc	mg/L	Semi-annually	Grab	Effluent
Flow	All Year		DMax Load	MGD	Semi-annually	Estimate	Effluent
Flow	All Year		MAvg Load	MGD	Semi-annually	Estimate	Effluent
Oil and Grease (Freon EM)	All Year		DMax Conc	mg/L	Semi-annually	Grab	Effluent
TSS	All Year		DMax Conc	mg/L	Semi-annually	Grab	Effluent
pH	All Year	9	DMax Conc	SU	Semi-annually	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Semi-annually	Grab	Effluent

Table 6-31. Permit Limits for Rohm and Haas Chemicals, LLC.

EFO Comments:
Manufacture of acrylic polymers and emulsions, vinyl acetate emulsions, and maleic co-polymer dispersants. Spray drying of water based acrylic emulsions and polymers.

TN0074705 Dalen Products, Inc.

Discharger rating: Minor
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 1/31/02
Expiration Date: 12/30/06
Receiving Stream(s): Unnamed tributary at mile 0.4 to Turkey Creek at mile 4.9
HUC-12: 060102010209
Effluent Summary: Noncontact-cooling water from Outfall 001
Treatment system: -

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Flow	All Year		DMax Load	MGD	Weekly	Instantaneous	Effluent
Flow	All Year		MAvg Load	MGD	Weekly	Instantaneous	Effluent
Temperature (°C)	All Year		DMax Conc	°C	Weekly	Grab	Effluent
pH	All Year	9	DMax Conc	SU	Weekly	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Weekly	Grab	Effluent

Table 6-32. Permit Limits for Dalen Products.

EFO Comments:
Converter of rolled goods used in the lawn and garden industry.

TN0056073 Travel Centers of America Concord

Discharger rating: Minor
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 11/1/02
Expiration Date: 10/31/07
Receiving Stream(s): Turkey Creek at mile 4.9
HUC-12: 060102010208
Effluent Summary: Fuel island wash down water from Outfall 001 and storm water runoff from Outfall SW1
Treatment system: -

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Oil and Grease (Freon EM)	All Year	15	DMax Conc	mg/L	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	MAvg Conc	mg/L	2/Month	Grab	Effluent
Settleable Solids	All Year	0.5	DMax Conc	mL/L	2/Month	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	2/Month	Grab	Effluent
pH	All Year	9	DMax Conc	SU	2/Month	Grab	Effluent
pH	All Year	6	DMin Conc	SU	2/Month	Grab	Effluent

Table 6-33. Permit Limits for Travel Centers of America Concord.

EFO Comments:
Facility is a truckstop providing a variety of services including: diesel fueling, maintenance and repair services, short-term parking, restaurant, convenience store, and motel.

TN0060402 Cummins Terminals, Inc.

Discharger rating: Minor
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 6/28/02
Expiration Date: 4/28/07
Receiving Stream(s): Unnamed tributary at mile 0.6 to Third Creek at mile 5.3 to Fort Loudon Reservior at Tennessee River mile 645.9
HUC-12: 060102010204
Effluent Summary: Storm water from diked area through Outfall 001, storm water from drains outside of rack area, potential overflow from rack and drum storage area through Outfall 002 and air-stripper effluent, monitoring wells and loading rack drains through Outfall 003
Treatment system: -

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Al (T)	All Year		DMax Conc	mg/L	Quarterly	Grab	Effluent
Benzene	All Year	0.5	DMax Conc	mg/L	Quarterly	Grab	Effluent
Ethylbenzene	All Year	0.2	DMax Conc	mg/L	Quarterly	Grab	Effluent
Flow	All Year		DMax Load	MGD	Quarterly	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	15	DMax Conc	mg/L	Quarterly	Grab	Effluent
Settleable Solids	All Year	0.5	DMax Conc	mL/L	Quarterly	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	Quarterly	Composite	Effluent
Toluene	All Year	1	DMax Conc	mg/L	Quarterly	Grab	Effluent
Xylene	All Year	0.5	DMax Conc	mg/L	Quarterly	Grab	Effluent
pH	All Year	9	DMax Conc	SU	Quarterly	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Quarterly	Grab	Effluent

Table 6-34. Permit Limits for Cummins Terminals, Inc.

Comments:
Petroleum is piped into storage units, marketed and then distributed by tanker trucks.

TN0060429 Magellan Terminals Holdings, LP - Knoxville Terminal

Discharger rating: Minor
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 12/09/03
Expiration Date: 11/30/07
Receiving Stream(s): Unnamed tributary to Third Creek at mile 5.3
HUC-12: 060102010204
Effluent Summary: Hydrostatic test water, truck loading rack wash water and contaminated stormwater runoff from Outfall 001
Treatment system: Oil-water separator

Segment	TN06010201067_1000
Name	Third Creek
Size	20.7
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Domestic Water Supply (Non-Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Escherichia coli, Nitrates, Other anthropogenic substrate alterations, Sedimentation/Siltation
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Municipal (Urbanized High Density Area), Site Clearance (Land Development or Redevelopment), Sanitary Sewer Overflows (Collection System Failures)

Table 6-35. Permit Limits for Magellan Terminals Holdings, LP - Knoxville Terminal.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Benzene	All Year	0.5	DMax Conc	mg/L	Monthly	Grab	Effluent
Ethylbenzene	All Year	0.2	DMax Conc	mg/L	Monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	15	DMax Conc	mg/L	Monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	MAvg Conc	mg/L	Monthly	Grab	Effluent
Settleable Solids	All Year	0.5	DMax Conc	mL/L	Monthly	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	Monthly	Composite	Effluent
Toluene	All Year	1	DMax Conc	mg/L	Monthly	Grab	Effluent
Xylene	All Year	0.5	DMax Conc	mg/L	Monthly	Grab	Effluent
pH	All Year	9	DMax Conc	SU	Monthly	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Monthly	Grab	Effluent

Table 6-36. Permit Limits for Magellan Terminals Holdings, LP - Knoxville Terminal.

EFO Comments:
Facility receives (by pipeline) and stores (in ASTs) refined petroleum products and loads trucks for distribution

TN0058483 Cummins Terminals, Inc. (CTI)

Discharger rating: Minor
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 11/27/03
Expiration Date: 11/26/07
Receiving Stream(s): Unnamed tributary to Third Creek at mile 5.3
HUC-12: 060102010204
Effluent Summary: Loading rack drains from Outfall 001 (dry weather discharge) and loading rack drains and contaminated storm water runoff from Outfall SW1 (wet weather discharge) and storm water runoff from Outfall SW2 (wet weather discharge)
Treatment system: Oil-water separator

Segment	TN06010201067_1000
Name	Third Creek
Size	20.7
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Domestic Water Supply (Non-Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Escherichia coli, Nitrates, Other anthropogenic substrate alterations, Sedimentation/Siltation
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Municipal (Urbanized High Density Area), Site Clearance (Land Development or Redevelopment), Sanitary Sewer Overflows (Collection System Failures)

Table 6-37. *Stream Segment Information for Cummins Terminals, Inc. (CTI).*

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Benzene	All Year	0.5	DMax Conc	mg/L	Monthly	Grab	Effluent
Ethylbenzene	All Year	0.2	DMax Conc	mg/L	Monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	15	DMax Conc	mg/L	Monthly	Grab	Effluent
Settleable Solids	All Year	0.5	DMax Conc	mL/L	Monthly	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	Monthly	Composite	Effluent
Toluene	All Year	1	DMax Conc	mg/L	Monthly	Grab	Effluent
Xylene	All Year	0.5	DMax Conc	mg/L	Monthly	Grab	Effluent
pH	All Year	9	DMax Conc	SU	Monthly	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Monthly	Grab	Effluent

Table 6-38. Permit Limits for Cummins Terminals, Inc. (CTI).

EFO Comments:
Storage and distribution of bulk petroleum products.

TN0067181 Marathon Petroleum Company LLC

Discharger rating: Minor
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 11/27/03
Expiration Date: 11/26/07
Receiving Stream(s): Tennessee River (Fort Loudon Reservoir) at mile 648.0
HUC-12: 060102010201
Effluent Summary: Hydrostatic tank test water and contaminated storm water runoff from Outfall 001
Treatment system: Retention basin

Segment	TN06010201020_1000
Name	Fort Loudoun Reservoir
Size	14600
Unit	Acres
First Year on 303(d) List	1990
Designated Uses	Irrigation (Supporting), Livestock Watering and Wildlife (Supporting), Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Non-Supporting)
Causes	Polychlorinated biphenyls
Sources	Contaminated Sediments

Table 6-39. Stream Segment Information for Marathon Petroleum Company LLC.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Oil and Grease (Freon EM)	All Year	15	DMax Conc	mg/L	Monthly	Grab	Effluent
Settleable Solids	All Year	0.5	DMax Conc	mL/L	Monthly	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	Monthly	Grab	Effluent
pH	All Year	9	DMax Conc	SU	Monthly	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Monthly	Grab	Effluent

Table 6-40. Permit Limits for Marathon Petroleum Company LLC.

EFO Comments:
Storage, blending and distribution of asphalt and asphalt emulsions

TN0064068 Rockford Manufacturing Company

Discharger rating: Minor
City: Rockford
County: Blount
EFO Name: Knoxville
Issuance Date: 9/30/03
Expiration Date: 9/29/07
Receiving Stream(s): Little River
HUC-12: 060102010106
Effluent Summary: Overflow/condensate and automatic purge wastewater from Outfalls 001, 002, and 004-006, and noncontact cooling water from Outfall 003
Treatment system: Retention basin

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Flow	All Year		DMax Load	MGD	2/Month	Estimate	Effluent
Flow	All Year		MAvg Load	MGD	2/Month	Estimate	Effluent
Temperature Diff. Downstrm & Upstrm (°C)	All Year		DMax Conc	°C	2/Month	Grab	Effluent
pH	All Year	9	DMax Conc	SU	2/Month	Grab	Effluent
pH	All Year	6.5	DMin Conc	SU	2/Month	Grab	Effluent

Table 6-41. Permit Limits for Rockford Manufacturing Company (Outfall 003)

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
BOD5	All Year	45	DMax Conc	mg/L	2/Month	Grab	Effluent
BOD5	All Year	30	MAvg Conc	mg/L	2/Month	Grab	Effluent
Flow	All Year		DMax Load	MGD	2/Month	Estimate	Effluent
Flow	All Year		MAvg Load	MGD	2/Month	Estimate	Effluent
Mo (T)	All Year		DMax Conc	mg/L	2/Month	Grab	Effluent
Mo (T)	All Year		MAvg Conc	mg/L	2/Month	Grab	Effluent
Nitrogen Ammonia Total (as NH4)	All Year		DMax Conc	mg/L	2/Month	Grab	Effluent
Nitrogen Ammonia Total (as NH4)	All Year		MAvg Conc	mg/L	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year		DMax Conc	mg/L	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year		MAvg Conc	mg/L	2/Month	Grab	Effluent
TRC	All Year	2	DMax Conc	mg/L	2/Month	Grab	Effluent
TSS	All Year	45	DMax Conc	mg/L	2/Month	Grab	Effluent
TSS	All Year	30	MAvg Conc	mg/L	2/Month	Grab	Effluent
pH	All Year	9	DMax Conc	SU	2/Month	Grab	Effluent
pH	All Year	6.5	DMin Conc	SU	2/Month	Grab	Effluent

Table 6-42. Permit Limits for Rockford Manufacturing Company (Outfalls 001, 002, 004, 005, & 006)

EFO Comments:
Yarn Spinning Mill

6.4.B. Water Treatment Plant Permits

TN0055204 Alcoa Water Treatment Plant

Discharger rating: Minor
City: Maryville
County: Blount
EFO Name: Knoxville
Issuance Date: 10/14/04
Expiration Date: 9/27/09
Receiving Stream(s): Little River at mile 9.0
HUC-12: 060102010106
Effluent Summary: Filter backwash and/or sedimentation basin washdown from Outfall 001
Treatment system: Conventional water filtration, turbidity removal using aluminum sulfate, chlorine, lime, potassium permanganate

Segment	TN06010201026_2000
Name	Little River
Size	17.63
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Domestic Water Supply (Supporting), Industrial Water Supply (Supporting), Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-43. Stream Segment Information for Alcoa Water Treatment Plant.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Al (T)	All Year	10	DMax Conc	mg/L	Monthly	Grab	Effluent
Flow	All Year		DMax Load	MGD	Monthly	Instantaneous	Effluent
Settleable Solids	All Year	0.5	DMax Conc	mL/L	Monthly	Grab	Effluent
TRC	All Year	1	DMax Conc	mg/L	Monthly	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	Monthly	Grab	Effluent
pH	All Year	9	DMax Conc	SU	Monthly	Grab	Effluent
pH	All Year	6.5	DMin Conc	SU	Monthly	Grab	Effluent

Table 6-44. Permit Limits for Alcoa Water Treatment Plant.

TN0004758 Lenoir City Utility Board - Water Treatment Plant B

Discharger rating: Minor
City: Lenoir City
County: Louden
EFO Name: Knoxville
Issuance Date: 9/29/04
Expiration Date: 9/27/09
Receiving Stream(s): Muddy Creek to Fort Loudon Dam
HUC-12: 060102010301
Effluent Summary: Filter backwash and/or sedimentation basin washdown from Outfall 001
Treatment system: Iron and turbidity removal Water Treatment Plant

Segment	TN06010201669_1000
Name	Muddy Creek
Size	15.3
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-45. Stream Segment Information for Lenoir City Utility Board - Water Treatment Plant B

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Al (T)	All Year	0.75	DMax Conc	mg/L	Monthly	Grab	Effluent
Fe (T)	All Year	2	DMax Conc	mg/L	Monthly	Grab	Effluent
Flow	All Year		DMax Load	MGD	Monthly	Instantaneous	Effluent
Settleable Solids	All Year	0.5	DMax Conc	mL/L	Monthly	Grab	Effluent
TRC	All Year	0.019	DMax Conc	mg/L	Monthly	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	Monthly	Grab	Effluent
pH	All Year	9	DMax Conc	SU	Monthly	Grab	Effluent
pH	All Year	6.5	DMin Conc	SU	Monthly	Grab	Effluent

Table 6-46. Permit Limits for Lenoir City Utility Board - Water Treatment Plant B.

TN0060577 First Utility District Water Treatment Plant

Discharger rating: Minor
City: Knoxville
County: Knox
EFO Name: Knoxville
Issuance Date: 9/29/04
Expiration Date: 9/27/09
Receiving Stream(s): Sinking Creek Embayment at mile 1.0 to Fort Loudon Reservoir (Tennessee River at mile 617.5)
HUC-12: 060102010207
Effluent Summary: Filter backwash and/or sedimentation basin washdown from Outfall 001
Treatment system: Turbidity removal Water Treatment Plant

Segment	TN06010204002_1000
Name	Fork Creek
Size	19.3
Unit	Miles
First Year on 303(d) List	2000
Designated Uses	Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting), Fish and Aquatic Life (Non-Supporting)
Causes	Nitrates, Sedimentation/Siltation, Escherichia coli
Sources	Grazing in Riparian or Shoreline Zones

Table 6-47. Stream Segment Information for First Utility District Water Treatment Plant.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Al (T)	All Year	10	DMax Conc	mg/L	Monthly	Grab	Effluent
Flow	All Year		DMax Load	MGD	Monthly	Instantaneous	Effluent
Settleable Solids	All Year	0.5	DMax Conc	mL/L	Monthly	Grab	Effluent
TRC	All Year	1	DMax Conc	mg/L	Monthly	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	Monthly	Grab	Effluent
pH	All Year	9	DMax Conc	SU	Monthly	Grab	Effluent
pH	All Year	6.5	DMin Conc	SU	Monthly	Grab	Effluent

Table 6-48. Permit Limits for First Utility District Water Treatment Plant.